IN: Yang, J.C., et al., Editors, Solid Propellant Gas Generators: Proceedings of the 1995 Workshop, NISTIR 5766, June 28-29, 1995, 26-31 pp, 1995

INTRODUCTORY REMARKS

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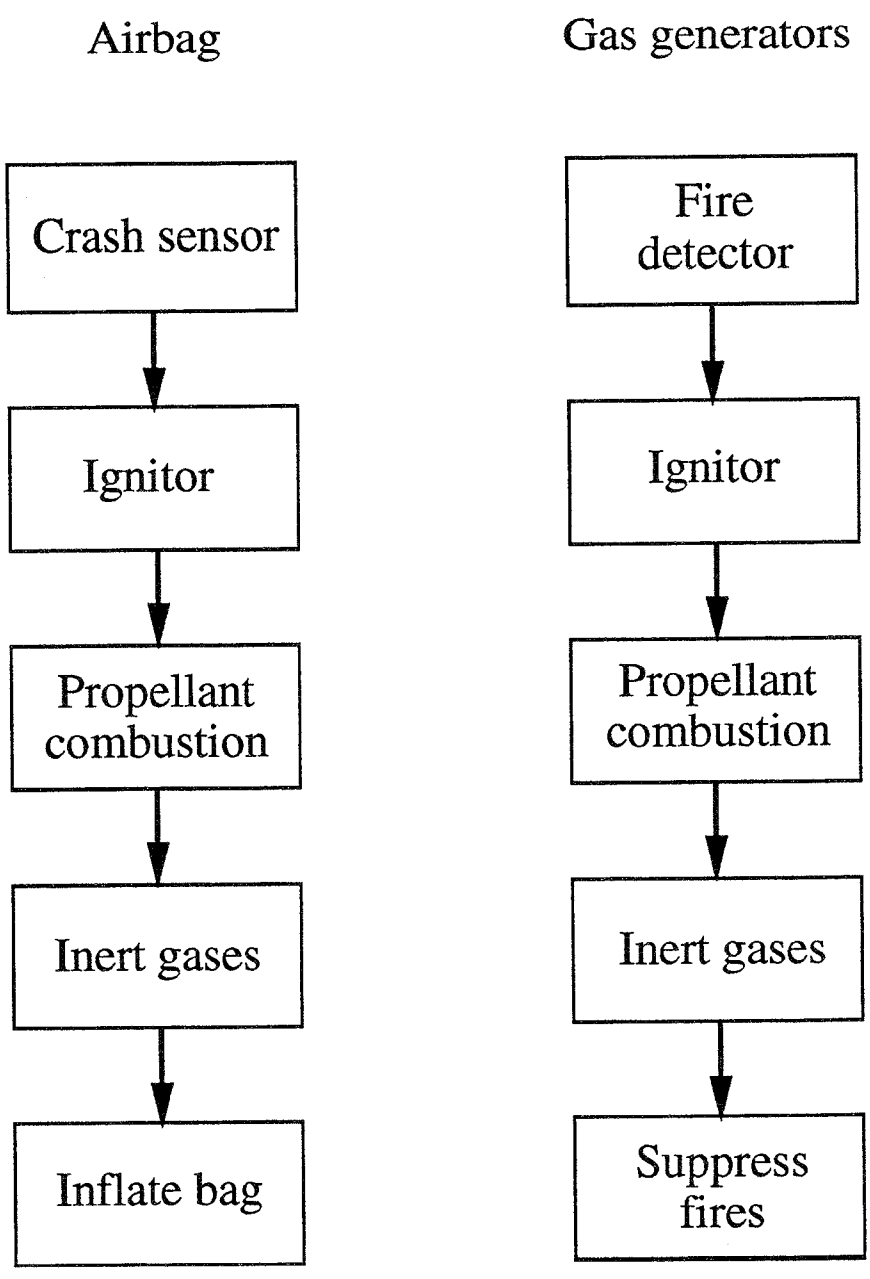
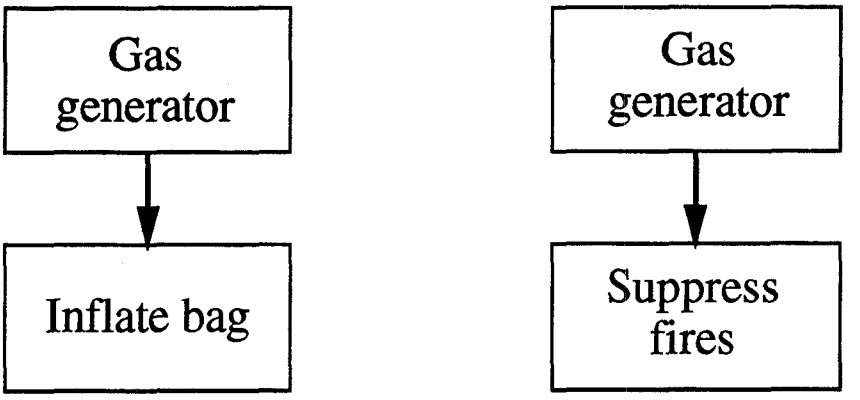
Objectives of the Workshop:

- To identify what we know and don't know in gas generator technology for fire suppression
- To identify future research areas in gas generator technology for fire suppression
- To identify potential users and address their needs and concerns

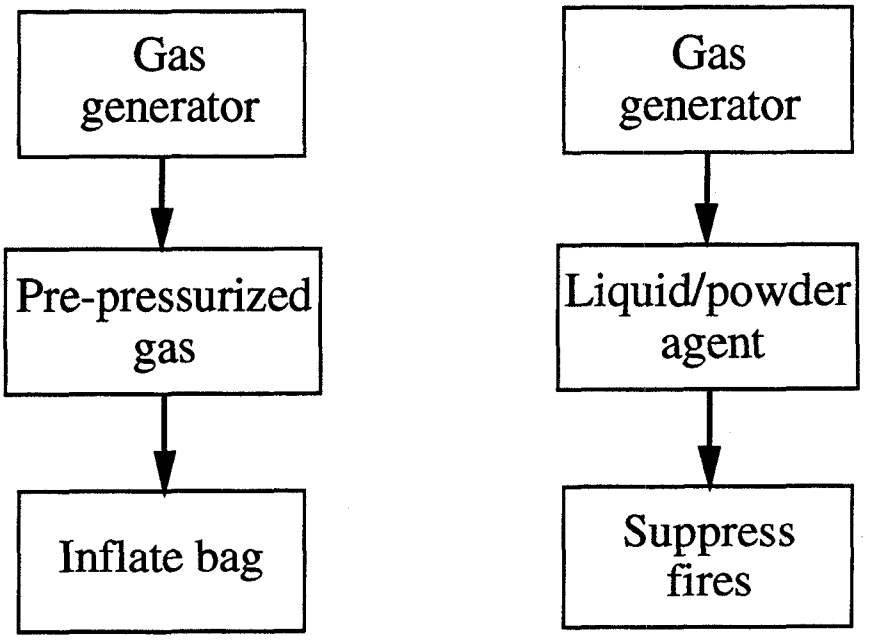

Airbag
Crash sensor
Ignitor
Propellant combustion
Inert gases
Inflate bag
Gas generators
Fire detector
Ignitor
Propellant combustion
Inert gases
Suppress fires

Classifications

Conventional



Hybrid



Review of Airbag Technologies

- More than 10,000 patents internationally

  R & D Areas:

  - Propellant Research
  - Filter Systems
  - Airbag materials
  - Overall System Designs
  - Computer Simulation and Modeling of Airbag Deployment

Solid Propellant Gas Generators

- Search for new propellants
  - Non-azide based
  - Thermochemistry and stoichiometry
  - Ignitability and burning rate
  - Toxicity
  - Storage stability
- Understand how they suppress fires
  - Dilution, chemical, thermal, or physical
- Modeling
- Hardware optimization
  - Filter, cooling, dispersion of combustion gases

Advantages of Gas Generators for Fire Suppression

- No Ozone-Depletion Potential
- Minimum / No Global-Warming Potential
- Stability
- Long Service and Storage Life
- Physically Compact

Applications of Gas Generators for Fire Suppression

Current: Engine Nacelle Fires
Dry Bay Fires

Potential: Industrial Explosion Prevention
Warehouse Fire Protection
Race Cars
Shipboard Engines
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